

WHAT IS CLAIMED IS:

1. A DC motor driver for driving a DC motor  
in which hall elements are mounted by shifting, with  
respect to a stator, a mounting position of the hall  
5 elements for detecting a position of a rotor,  
comprising:

an FG pattern for outputting a pulse wave of  
a period proportional to a number of revolutions of  
the DC motor,

10 an FG amplifier for producing an FG signal  
proportional to the number of revolutions of the DC  
motor on the basis of the output of the FG pattern,

a speed discriminator circuit for comparing a  
period of the FG signal with a preset period to  
15 output a signal corresponding to an error in the  
number of revolutions of the DC motor,

a charge pump circuit for converting the  
output of the speed discriminator circuit into DC  
voltage,

20 a first hall amplifier for amplifying the  
amplitude of output voltage of the hall elements so  
as to be proportional to the DC voltage of the charge  
pump,

a second hall amplifier for producing a  
25 rectangular wave on the basis of the output voltage  
of the hall elements,

an F/V converter for converting the frequency

of the FG signal into DC voltage,

selecting means for selecting the first hall amplifier when output voltage of the F/V converter is equal to or more than a preset threshold voltage, and  
5 selecting the second hall amplifier when the output voltage of the F/V converter is less than the preset threshold voltage,

a PWM comparator for producing a power-on pattern for switching the driving of the DC motor by  
10 comparing the output voltage of the first hall amplifier or the second hall amplifier selected by the selecting means with a reference triangular wave for PWM modulation, and

current amplification transistors for  
15 supplying current to windings of the DC motor in accordance with the output of the PWM comparators.

2. The DC motor driver according to claim 1, wherein the threshold voltage is set to voltage of  
20 one half of voltage obtained at the time of a rated number of revolutions of the DC motor.